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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,192	12/01/2003	Kazunori Anazawa	117883	1323
25944	7590	05/26/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			JACKSON JR, JEROME	
			ART UNIT	PAPER NUMBER
			2815	

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/724,192

Applicant(s)

ANAZAWA ET AL.

Examiner

Jerome Jackson Jr.

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) \_\_\_\_\_
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1,2,4-6 and 10-12 are rejected under 35 U.S.C. 102(e) as being anticipated by O'Keefe, of record.

The previous rejection still applies. The limitations "to irradiate... wherein a conductance...is controlled" are statements of intended use or functional language and do not structurally distinguish the claims over the applied art which can function in the same manner. The gate structure and carbon nanotube channel structure of O'Keefe can function in the same manner claimed. Moreover, the gate structure in O'Keefe imposes a changing electric field across a carbon nanotube channel and the channel conductance is dependent on the applied electric field value. There is no particularly claimed "predetermined frequency" in claim 1 which would unequivocally distinguish over the on/off or amplified switching frequency of O'Keefe. Nor is there any particular structure claimed which would in any way distinguish over O'Keefe. The new limitations do nothing more than describe a function of the structure at a "predetermined frequency". There is no proof that the structure of O'Keefe cannot function in the same manner. See *In re Pearson* 181 USPQ 641, *Ex parte Minks* 169 USPQ 120, and *In re Swinehart* 169 USPQ 226 on labels, statements of intended use and functional language in claims drawn to structure as we have here. New claims 11 and 12 are rejected as the small size and structure of the O'Keefe nanotube FET should allow gigahertz switching.

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Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Keefe in view of Watanabe, of record.

The previous rejection with the above comments applies. Moreover, in regard to new claims 11 and 12 Watanabe discusses GHz and THz switching. See paragraphs 0009 to 0011.

Applicant's arguments filed 3/14/05 have been fully considered but they are not persuasive. Arguments that O'Keefe does not teach the particular function claimed is not persuasive as the structure claimed is anticipated or obvious over the applied art. In claims drawn to structure functional language is not persuasive unless applicant can prove that the applied art cannot function in the same manner. There is no evidence that the applied art cannot function in the manner claimed and no difference in the structure claimed. If there is some alleged difference in structure applicant has not claimed it.

Arguments regarding the explicit teachings and function of O'Keefe or Watanabe are unconvincing of patentability as there is no evidence that either cannot function in the manner claimed or do not have some particular structure claimed.

Applicant apparently argues that neither applied reference has recognized that there is some resonant effect around 1GHz that makes the nanotube's conductance increase. This argument is unconvincing of patentability because the structure of claim 1 is anticipated by O'Keefe and under these circumstances, unless applicant can prove that O'Keefe cannot function in the manner claimed, there is no alternative but to reject the claim under 35 USC 102 as anticipated.

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**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerome Jackson Jr. whose telephone number is 571 272 1730. The examiner can normally be reached on t-th 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 571 272 1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jj

  
**JEROME JACKSON**  
**PRIMARY EXAMINER**